We claim:-

1. A process for the heterogeneously catalyzed gas-phase partial oxidation of acrolein to acrylic acid over a catalytically active multimetal oxide material which contains the elements Mo and V, at least one of the elements Te and Sb and at least one of the elements from the group consisting of Nb, Ta, W and Ti and whose X-ray diffraction pattern has no reflections with the peak position $2\theta = 50.0 \pm 0.3°$ but has reflections h, i and k whose peaks are at the diffraction angles (2θ) $22.2 \pm 0.5°$ (h), $27.3 \pm 0.5°$ (i) and $28.2 \pm 0.5°$ (k),

- the reflection h being the one with the strongest intensity within the X-ray diffraction pattern and having a full width at half height of not more than 0.5°,

- the intensity P_i of the reflection i and the intensity P_k of the reflection k fulfilling the relationship $0.65 \leq R \leq 0.85$, where R is the intensity ratio defined by the formula

$$R = P_i / (P_i + P_k)$$

and

- the full width at half height of the reflection i and of the reflection k being in each case $\leq 1°$,

wherein the catalytically active multimetal oxide material is one of the stoichiometry (I)

$$Mo_1V_aM^1_bM^2_cM^3_dO_n \qquad (I),$$

where

M^1 is at least one of the elements from the group consisting of Te and Sb;

M^2 is at least one of the elements from the group consisting of Nb, Ti, W, Ta and Ce;

M^3 is at least one of the elements from the group consisting of Pb, Ni, Co, Bi, Pd, Ag, Pt, Cu, Au, Ga, Zn, Sn, In, Re, Ir, Sm, Sc, Y, Pr, Nd and Tb;

a = from 0.01 to 1,

b = from > 0 to 1,

c = from > 0 to 1,

d = from > 0 to 0.5 and

n is a number which is determined by the valency and frequency of the elements other than oxygen in (I).

2. A process as claimed in claim 1, wherein $0.67 \leq R \leq 0.75$.

3. A process as claimed in claim 1, wherein $0.69 \leq R \leq 0.75$.

4. A process as claimed in claim 1, wherein $0.71 \leq R \leq 0.74$.

5. A process as claimed in claim 1, wherein $R = 0.72$.

6. A process as claimed in any of claims 1 to 5, wherein the specific surface area of the catalytically active multimetal oxide material (I) is from 11 to 40 m^2/g.

7. A process as claimed in any of claims 1 to 6, wherein the X-ray diffraction pattern of the catalytically active multimetal oxide material (I) has further reflections having their peak position at the following diffraction angles 2θ:

9.0 ± 0.4° (l),
6.7 ± 0.4° (o) and
7.9 ± 0.4° (p).

8. A process as claimed in claim 7, wherein the X-ray diffraction pattern of the catalytically active multimetal oxide material (I) has further reflections with their peak position at the following diffraction angles 2θ:

29.2 ± 0,4° (m) and
35.4 ± 0.4° (n).

9. A process as claimed in claim 8, wherein the reflections h, i, l, m, n, o, p and q have the following intensities on the same intensity scale:

h = 100,
i = from 5 to 95,
l = from 1 to 30,

m = from 1 to 40,
n = from 1 to 40,
o = from 1 to 30,
p = from 1 to 30 and
q = from 5 to 60.

10. A process as claimed in any of claims 1 to 9, wherein a = from 0.05 to 0.6.

11. A process as claimed in any of claims 1 to 10, wherein b = from 0.01 to 1.

12. A process as claimed in any of claims 1 to 11, wherein c = from 0.01 to 1.

13. A process as claimed in any of claims 1 to 12, wherein d = from 0.0005 to 0.5.

14. A process as claimed in any of claims 1 to 13, wherein

a = from 0.1 to 0.6,
b = from 0.1 to 0.5,
c = from 0.1 to 0.5 and
d = from 0.001 to 0.5.

15. A process as claimed in any of claims 1 to 14, wherein at least 50 mol% of M^2, based on its total amount, is Nb.

16. A process as claimed in any of claims 1 to 14, wherein at least 75 mol% of M^2, based on its total amount, is Nb.

17. A process as claimed in any of claims 1 to 14, wherein M^2 is exclusively Nb.

18. A process as claimed in any of claims 1 to 17, wherein M^3 is at least one element from the group consisting of Ni, Co, Bi, Pd, Ag, Au, Pb and Ga.

19. A process as claimed in any of claims 1 to 17, wherein M^3 is at least one element from the group consisting of Ni, Co, Pd and Bi.

20. A process as claimed in any of claims 1 to 17, wherein M^1 is Te, M^2 is Nb and M^3 is at least one element from the group consisting of Ni, Co and Pd.

21. A process as claimed in claim 1, wherein the multimetal oxide material (I) is contained in a total multimetal oxide material whose X-ray diffraction pattern has no reflection with the peak position $2\theta = 50.0 \pm 0.3°$.

22. A process as claimed in claim 21, wherein the multimetal oxide material (I) is present in the total multimetal oxide material in a form diluted with at least one finely divided material from the group consisting of silica, titanium dioxide, alumina, zirconium oxide and niobium oxide.

23. A process as claimed in claim 22, wherein the total multimetal oxide material contains ≥ 80% by weight of multimetal oxide material (I) and the X-ray diffraction pattern of the total multimetal oxide material has a reflection with the peak position $2\theta = 50.0 \pm 0.3°$.

24. A process as claimed in claim 22, wherein $R \geq 0.65$ and ≤ 0.90 is fulfilled for the X-ray diffraction pattern of the total multimetal oxide material.

25. A process as claimed in any of claims 1 to 24, wherein the heterogeneously catalyzed gas-phase partial oxidation of acrolein is effected in the presence of propane and/or propene.

26. A process as claimed in any of claims 1 to 25, which is carried out in a tube-bundle reactor.

27. A process as claimed in any of claims 1 to 26, wherein the catalytically active multimetal oxide material (I) is a component of a coated catalyst.